

Sandwich PhD in Mass and yield measurements of spontaneous fission fragments (B034221)

Scholarship opportunities

We are looking for a talented student who wishes to design his/her own PhD research project on a topic within the scope of the research theme sketched above.

As a PhD scholarship student, you will develop your own research project in consultation with the associated supervisor(s). You will conduct independent and original scientific research, report results via peer-reviewed publications, conference presentations, and ultimately a PhD thesis. The PhD thesis has to be completed within four years. Being part of a cutting-edge research program, you will receive training in the form of hands-on instruction, advanced courses, summer/winter schools, as well as complementary workshops on generic research and transferable skills. Special attention is paid to training activities directed towards your future (academic or non-academic) career after the PhD trajectory, in the context of our Career Perspective Series.

Qualifications

We are looking for highly motivated, proactive and diligent researchers with good communication skills and the ability to work in an interdisciplinary team. Demonstrable command of the English language is a prerequisite. Successful candidates must have a Master's degree (or equivalent) that is relevant to the topic of interest.

Organisation

1) The University of Groningen is a comprehensive research university with a global outlook, deeply rooted in Groningen, City of Talent. Quality has been our top priority for over four hundred years, and with success: the University is currently in or around the top 100 on several influential ranking lists.

The Faculty of Science and Engineering (FSE) is the largest faculty within the University. We offer first-rate education and research in a wide range of

science and engineering areas, including astronomy, mathematics and physics. Our community has an open and informal character with students and staff from around the world.

2) GSI Helmholtzzentrum für Schwerionenforschung in Darmstadt operates one of the leading particle accelerators for science. In the next few years, the new facility, FAIR (Facility for Antiproton and Ion Research), one of the world's largest research projects, will be built in an international cooperation. GSI and FAIR offer the opportunity to work together in this international environment with a team of employees committed to ensuring each day to conduct world-class science.

At the fragment separator FRS, a separator and spectrometer for heavy-ion and exotic nuclear beam experiments, the FRS Ion Catcher is used for precision experiments with thermalized exotic ions. The ground state and production properties (mass, half-life, branching ratio, yields, ...) of these ions are studied by means of mass spectrometry.

We offer a sandwich scholarship for PhD projects within our research theme "mass and yield measurements of exotic nuclei produced in spontaneous fission". The mass of a nucleus is one of its fundamental properties and is the result of a very complex interaction between the nucleons comprising the nucleus. By measuring the mass with high precision, one can determine the binding energy and thus get an in-depth understanding of the forces acting in the nucleus and its structure. The nuclear fission process is still not understood. Therefore, world-wide programs have been set up to investigate fission. The goal of these studies is a better understanding of the nuclear structure in the heavy nuclei that undergo fission. The obtained knowledge is applied in the design and operation of nuclear reactors and the handling of nuclear waste (e.g., transmutation). Isotopic fission and isomeric fission yields and key observables to investigate the fission process. The FRS Ion Catcher offers unique opportunities to measure these observables for spontaneous fission products.

Conditions

The position is offered within the UG PhD Scholarship Program and in a sandwich construction with GSI Helmholtz center for heavy ion research. This program is issued by the Dutch Ministry of Education, Culture, and Science (OCW) within the framework of the national PhD Scholarship Program and the GSI GET_INVOLVED Programme. PhD Scholarship student receives a scholarship (stipend) of € 2,181 gross per month from the University of Groningen for the first two years. The last two years, the student receives an amount similar to the net amount obtained in the first

two years. PhD Scholarship students are not employed by the university. PhD Scholarship students have, therefore, different rights, obligations, and a different income than employed PhD candidates.

Please consider the terms and conditions of the PhD Scholarship Program on the following website:

[https://www.rug.nl/\(...\)nditions-application](https://www.rug.nl/(...)nditions-application)

Application

The selection procedure will proceed in three stages:

1. Application (until 30 June 2021)
2. Development of a full research proposal (1 July – 1 August 2021)
3. Assessment by selection committee (1 August – 15 September 2021)

1. Application

Please upload your complete application in English until 30 June 23:59 / before 1 July 2021 Dutch local time. Combine all required documents in a single PDF file and upload it as your 'Letter of motivation' via the online application form (click on 'Apply' below on the advertisement on the university website to access the application form).

Please use the following format to complete your application file:

a) Title page (1 page max.):

- name of the applicant
- MSc degree and university
- intended starting date (1 November, 1 December 2021 or, ultimately, 1 January, 2022).

b) Cover letter (1 page max.): a letter introducing yourself, describing your motivation and qualifications to conduct scientific research in the topic of your choice, and your expectations of the PhD program.

c) CV (2 pages max.).

d) Academic records and a certified copy or scan of your MSc diploma (or equivalent; provide a certified University letter stating when your graduation will be between the application deadline and start of the project).

e) Proof of sufficient competence in English
([https://www.rug.nl/\(...\)sion/english?lang=en](https://www.rug.nl/(...)sion/english?lang=en)).

f) Names and contact details of two academic references.

g) Initial research project idea: brief description of the research question(s) that you wish to address with respect to the topic of your interest and your approach to address the research question(s) (500 words max.).

Applications that do not satisfy the requested format will not be taken into consideration.

2. Development of a full research proposal

The application files of candidates will first be assessed by the intended supervisors. On the basis of the observed qualifications of the candidates, the quality and originality of the candidates' initial research project idea, and the fit with the supervisors' ongoing research, the supervisors will invite up to three candidates to develop their initial project idea into a full research proposal of approximately 1.500-2.000 words (excluding references).

The proposal must include:

- introduction, importance, state of the art, fit with the theme mass and branching-ratios
- main goal(s) and research question(s)
- approach and methods
- feasibility, research budget and timeline.

In the course of this stage, the supervisors will nominate at most two candidate(s) for the PhD scholarship to the selection committee.

3. Interviews and final selection

A selection committee will assess both the application and full research proposal of nominated candidates, using the following criteria:

- qualifications of the candidate: grades, research experience, motivation
- the research proposal: i.e. quality, originality, feasibility, and fit with the research theme
- the admission requirements of the Graduate School of Science and Engineering.

The highest ranked candidates will be invited to an interview with the selection committee. This interview will take place in September 2021.

Timeline

Publication of the call: 27 May 2021

Deadline for application: 30 June 2021

Interviews: September 2021

Announcement of selected/rejected candidates: 1 October 2021

Start of the position: between 1 November 2021 and 1 January 2022

We are an equal opportunity employer and value diversity at our University. We are committed to building a diverse faculty so you are encouraged to

apply. Our selection procedure follows the guidelines of the Recruitment code (NVP), <https://www.nvp-hrnetwerk.nl/sollicitatiecode/> and European Commission's European Code of Conduct for recruitment of researchers, <https://euraxess.ec.europa.eu/jobs/charter/code>

Unsolicited marketing is not appreciated.

Information

For information you can contact:

- Prof. N. Kalantar-Nayestanaki, +31 50 3636676, n.kalantar-nayestanaki@rug.nl

Please do not use the e-mail address(es) above for applications.

[Apply](#)